

# ANNUAL INDEX VOLUME 25

## 1991

### KEY

Number in parentheses is issue number; other number is page number.

(145)100 = Issue 145, Page 100  
Issue 145 = February, 1991  
Issue 146 = April, 1991  
Issue 147 = June, 1991  
Issue 148 = September, 1991  
Issue 149 = October, 1991  
Issue 150 = December, 1991

### PROFESSIONAL COURSES

Buses & LANs, Lesson 11 — LANs, John Purvis and Bob Prater, St. Edward's University (146)85

Buses & LANs, Lesson 12 — MANs, WANs and PABXs, John Purvis and Bob Prater, St. Edward's University (147)77

C-Language Programming, Lesson 1 — Introduction to C Programming, Clarence deSilva, Ph.D., PE and Lalith Gamage, MS (149)85

C-Language Programming, Part 2 — Data Types and Operators, Clarence deSilva, Ph.D., PE and Lalith Gamage, MS (150)66

DOS, Lesson 1 — Introduction to the Disk Operating System, Milton Aronson (148)70

DOS, Lesson 2 — Commands for Working with Files, Milton Aronson (149)92

DOS, Lesson 3 — Directories, Milton Aronson (150)72

Expert Systems, Lesson 12 — System Types, Joan B. Stoddard, Stoddard Productivity Systems (145)85

Forth, Part 20 — Floating-Point Arithmetic, David Penz, PE (145)89

Forth, Part 21 — The Quadratic, David Penz, PE (146)91

Forth, Part 22 — Comparison of Forth with BASIC, FORTRAN, Pascal and COBOL, David Penz, PE (147)85

Forth, Part 23 — QED-Forth™, Michael G. Dorman, Mosaic Industries (148)72

Photoelectric Sensing, Part 1, Fred W. Poppe, Allen-Bradley (149)94

Photoelectric Sensing, Part 2, Fred W. Poppe, Allen-Bradley (150)61

### ARTICLES

Air Gaging, Jacques Fauque, SVA Inc. (146)104

ARCNET — A Solution for the Industrial LAN, Barbara L. Veal, NCR Corporation (145)104

ASME / NIST Long-Radius Flow Nozzle, David Wald, Delta-T Company (145)110

CAC — Computer-Aided Calibration, Dave Martin, Promac Inc. (148)74

Calibration of Ballistic Pressure Transducers, Arpad A. Juhasz and Charles D. Bullock, US Army Ballistic Research Laboratory, Donald H. Newhall, Harwood Engineering Co., Inc. (146)123

Cassette-Based Data Recording, Terry Mason, Avalon Electronics Ltd. (149)99

Ceramic-Liner Electromagnetic Flowmeters, Richard Lilla, Johnson Yokogawa (146)102

Composite Materials Testing, Andrew W. Davis, Andrew Davis Associates (150)77

Data Management System, Grant M. Smith, Western Graphtec (148)84

Direct Energy Measurement, D.E. Christopher, PE (150)80

DSO — Digital Storage Oscilloscope, Doug MacLennan, Gould, Inc. (146)106

Electrolytic Level/Tilt Sensors, W.R. Crossan, Jr., The Fredericks Co. (145)116

Environmental Monitor, Bill Wood, Pioneer Chlor Alkali, and Jim Machulda, MACH Systems (149)119

Fiber-Optics — Noncontact Technology, Scott Wohlstein, SD Labs (148)104

Film-on-Quartz Strain Gages, Jean-Pierre Aumard, Scaime SA and John C. Kicks, PTC/Scaime USA (147)106

Flow Measurement Techniques, Roger L.T. Oehmke, Georgia Institute of Technology (148)96

Gamma Level Measurement, Paul Holzschuer, Ohmart Corporation (149)104

Gear Transmission with Continuously-Variable Speed Ratio, Clarence deSilva, Ph.D., Martin Schultz and Edward Dolejsi (150)83

Grounding and ESD, Raymond Kallman, Pilgrim Electric (149)106

Hard Disk Problems, Steve Gibson, Gibson Research Corp. (148)106

Industrial Applications of Personal Computers, James J. Pinto, Action Instruments, Inc. (147)112

Infrared Thermometry, William R. Barron, Williamson Corporation (146)98

Intelligent Message Displays, Erich H. Reuss and Peter Rummer, ITT Instruments (150)74

Laser Gaging, Scott Wohlstein, SD Laboratories (147)108

Level Gaging, Al Ehrenfried, Metritape, Inc. (146)112

Linear Measurement with Rack/Pinion, S.M. Selka, Reliance Gear Company (145)120

Mass Flow and Density, Peter M. Harrie, Schlumberger Transducer Div. (146)109

Measurement & Control Data (146)121

Measurement & Control Data (147)122

Measurement & Control Data (148)108

Measurement & Control Data (149)116

Measurement & Control Data (150)88

Mineral-Insulated Metal-Sheathed (MIMS) Thermocouple Stability, Hank L. Daneman, PE (145)93

Multichannel Pressure Control, Truls Henriksen, Pressure Systems, Inc. (148)78

Near-Infrared Spectroscopy, Part 4 — Non-contact Technology, Emil W. Ciurczak and Scott Wohlstein (149)114

NDT of Composites, Edwin N. Kaufman (145)114

Optimization of Orifice Plates, Venturis and Nozzles, Stephan Rudback, Matematica AB (147)116

PC-Based Data Acquisition, Rick Rehrig, Micro-Specialty Systems (147)96

PC-Based Instrumentation, Ved Vasconcelos, Keithley-Metrabyte (146)116

Photoelectric Sensors — Tests and Specifications, Scott M. Judd, Opcon, Inc. (148)88

Power Protection, Howard C. Cooper, AMEMCO, and Ramon L. Mundsinger, Energy Surge Control (145)96

Recorder Resolution, David M. Gaskill, Astro-Med, Inc. (147)100

SPRT Calibration, Henry E. Sostmann, PE (145)108

Terminal Blocks, Kurt Kroemer, Weidmuller (147)93

Touch-Screen Technology, Joe Williamson, Carroll Touch (149)109

Transient Absorption Technology, Jerry A. Sgrignoli, Phoenix Contact (148)93

Two-Wire Transmitters, Montgomery R. Coats, Weed Instruments (147)124

UBS™ — Uninterruptible Battery System, Steve Paul and Murray Leonard, Best Power Technology (148)100

Vortex Flowmeter Performance, Bob Biles, Johnson Yokogawa Corp. (148)81

Vortex Shedding Flowmeters, Jim Storer, Engineering Measurements Co. (147)102

Yardage Gaging, Vernon Wilkinson, Wilkinson Associates (146)114

# ANNUAL INDEX VOLUME 25

## 1991

### KEY

Number in parentheses is issue number; other number is page number.

(145)100 = Issue 145, Page 100  
Issue 145 = February, 1991  
Issue 146 = April, 1991  
Issue 147 = June, 1991  
Issue 148 = September, 1991  
Issue 149 = October, 1991  
Issue 150 = December, 1991

### PROFESSIONAL COURSES

Buses & LANs, Lesson 11 — LANs, John Purvis and Bob Prater, St. Edward's University (146)85

Buses & LANs, Lesson 12 — MANs, WANs and PABXs, John Purvis and Bob Prater, St. Edward's University (147)77

C-Language Programming, Lesson 1 — Introduction to C Programming, Clarence deSilva, Ph.D., PE and Lalith Gamage, MS (149)85

C-Language Programming, Part 2 — Data Types and Operators, Clarence deSilva, Ph.D., PE and Lalith Gamage, MS (150)66

DOS, Lesson 1 — Introduction to the Disk Operating System, Milton Aronson (148)70

DOS, Lesson 2 — Commands for Working with Files, Milton Aronson (149)92

DOS, Lesson 3 — Directories, Milton Aronson (150)72

Expert Systems, Lesson 12 — System Types, Joan B. Stoddard, Stoddard Productivity Systems (145)85

Forth, Part 20 — Floating-Point Arithmetic, David Penz, PE (145)89

Forth, Part 21 — The Quadratic, David Penz, PE (146)91

Forth, Part 22 — Comparison of Forth with BASIC, FORTRAN, Pascal and COBOL, David Penz, PE (147)85

Forth, Part 23 — QED-Forth™, Michael G. Dorman, Mosaic Industries (148)72

Photoelectric Sensing, Part 1, Fred W. Poppe, Allen-Bradley (149)94

Photoelectric Sensing, Part 2, Fred W. Poppe, Allen-Bradley (150)61

### ARTICLES

Air Gaging, Jacques Fauque, SVA Inc. (146)104

ARCNET — A Solution for the Industrial LAN, Barbara L. Veal, NCR Corporation (145)104

ASME / NIST Long-Radius Flow Nozzle, David Wald, Delta-T Company (145)110

CAC — Computer-Aided Calibration, Dave Martin, Promac Inc. (148)74

Calibration of Ballistic Pressure Transducers, Arpad A. Juhasz and Charles D. Bullock, US Army Ballistic Research Laboratory, Donald H. Newhall, Harwood Engineering Co., Inc. (146)123

Cassette-Based Data Recording, Terry Mason, Avalon Electronics Ltd. (149)99

Ceramic-Liner Electromagnetic Flowmeters, Richard Lilla, Johnson Yokogawa (146)102

Composite Materials Testing, Andrew W. Davis, Andrew Davis Associates (150)77

Data Management System, Grant M. Smith, Western Graphtec (148)84

Direct Energy Measurement, D.E. Christopher, PE (150)80

DSO — Digital Storage Oscilloscope, Doug MacLennan, Gould, Inc. (146)106

Electrolytic Level/Tilt Sensors, W.R. Crossan, Jr., The Fredericks Co. (145)116

Environmental Monitor, Bill Wood, Pioneer Chlor Alkali, and Jim Machulda, MACH Systems (149)119

Fiber-Optics — Noncontact Technology, Scott Wohlstein, SD Labs (148)104

Film-on-Quartz Strain Gages, Jean-Pierre Aumard, Scaime SA and John C. Kicks, PTC/Scaime USA (147)106

Flow Measurement Techniques, Roger L.T. Oehmke, Georgia Institute of Technology (148)96

Gamma Level Measurement, Paul Holzschuer, Ohmart Corporation (149)104

Gear Transmission with Continuously-Variable Speed Ratio, Clarence deSilva, Ph.D., Martin Schultz and Edward Dolejsi (150)83

Grounding and ESD, Raymond Kallman, Pilgrim Electric (149)106

Hard Disk Problems, Steve Gibson, Gibson Research Corp. (148)106

Industrial Applications of Personal Computers, James J. Pinto, Action Instruments, Inc. (147)112

Infrared Thermometry, William R. Barron, Williamson Corporation (146)98

Intelligent Message Displays, Erich H. Reuss and Peter Rummer, ITT Instruments (150)74

Laser Gaging, Scott Wohlstein, SD Laboratories (147)108

Level Gaging, Al Ehrenfried, Metritape, Inc. (146)112

Linear Measurement with Rack/Pinion, S.M. Selka, Reliance Gear Company (145)120

Mass Flow and Density, Peter M. Harrie, Schlumberger Transducer Div. (146)109

Measurement & Control Data (146)121

Measurement & Control Data (147)122

Measurement & Control Data (148)108

Measurement & Control Data (149)116

Measurement & Control Data (150)88

Mineral-Insulated Metal-Sheathed (MIMS) Thermocouple Stability, Hank L. Daneman, PE (145)93

Multichannel Pressure Control, Truls Henriksen, Pressure Systems, Inc. (148)78

Near-Infrared Spectroscopy, Part 4 — Non-contact Technology, Emil W. Ciurczak and Scott Wohlstein (149)114

NDT of Composites, Edwin N. Kaufman (145)114

Optimization of Orifice Plates, Venturis and Nozzles, Stephan Rudback, Matematica AB (147)116

PC-Based Data Acquisition, Rick Rehrig, Micro-Specialty Systems (147)96

PC-Based Instrumentation, Ved Vasconcelos, Keithley-Metrabyte (146)116

Photoelectric Sensors — Tests and Specifications, Scott M. Judd, Opcon, Inc. (148)88

Power Protection, Howard C. Cooper, AMEMCO, and Ramon L. Mundsinger, Energy Surge Control (145)96

Recorder Resolution, David M. Gaskill, Astro-Med, Inc. (147)100

SPRT Calibration, Henry E. Sostmann, PE (145)108

Terminal Blocks, Kurt Kroemer, Weidmuller (147)93

Touch-Screen Technology, Joe Williamson, Carroll Touch (149)109

Transient Absorption Technology, Jerry A. Sgrignoli, Phoenix Contact (148)93

Two-Wire Transmitters, Montgomery R. Coats, Weed Instruments (147)124

UBS™ — Uninterruptible Battery System, Steve Paul and Murray Leonard, Best Power Technology (148)100

Vortex Flowmeter Performance, Bob Biles, Johnson Yokogawa Corp. (148)81

Vortex Shedding Flowmeters, Jim Storer, Engineering Measurements Co. (147)102

Yardage Gaging, Vernon Wilkinson, Wilkinson Associates (146)114

# AUTHORS

- Aronson, Milton, DOS, Lesson 1 — Introduction to the Disk Operating System (148)70
- Aronson, Milton, DOS, Lesson 2 — Commands for Working with Files (149)92
- Aronson, Milton, DOS, Lesson 3 — Directories (150)72
- Aumard, Jean-Pierre, Scaime SA, and John C. Kicks, PTC / Scaime USA, Film-on-Quartz Strain Gages (147)106
- Barron, William R., Williamson Corporation, Infrared Thermometry (146)98
- Biles, Bob, Johnson Yokogawa Corp., Vortex Flowmeter Performance (148)81
- Bullock, Charles D., and Arpad A. Juhasz, US Army Ballistic Research Laboratory, Donald H. Newhall, Harwood Engineering Co., Inc., Calibration of Ballistic Pressure Transducers (146)123
- Christopher, D.E., PE, Direct Energy Measurement (150)80
- Ciurczak, Emil W., and Scott Wohlstein, Near-Infrared Spectroscopy, Part 4 — Noncontact Technology (149)114
- Coats, Montgomery R., Weed Instruments, Two-Wire Transmitters (147)124
- Cooper, Howard C., AMEMCO, and Ramon L. Mundsinger, Energy Surge Control, Power Protection (145)96
- Crossan, W.R., Jr., The Fredericks Co., Electrolytic Level/Tilt Sensors (145)116
- Daneman, Hank L., PE, Mineral-Insulated Metal-Sheathed (MIMS) Thermocouple Stability (145)93
- Davis, Andrew W., Andrew Davis Associates, Composite Materials Testing (150)77
- DeSilva, Clarence, Ph.D., PE, and Lalith Gamage, MS, C-Language Programming, Lesson 1 — Introduction to C Programming (149)85
- DeSilva, Clarence, Ph.D., PE, and Lalith Gamage, MS, C-Language Programming, Lesson 2 — Data Types and Operators (150)66
- DeSilva, Clarence, Ph.D., Martin Schultz, and Edward Dolejsi, Gear Transmission with Continuously-Variable Speed Ratio (150)83
- Dolejsi, Edward, Clarence deSilva, Ph.D., and Martin Schultz, Gear Transmission with Continuously-Variable Speed Ratio (150)83
- Dorman, Michael G., Mosaic Industries, Forth, Part 23 — QED-Forth™ (148)72
- Ehrenfried, Al, Metritape, Inc., Level Gaging (146)112
- Fauque, Jacques, SVA Inc., Air Gaging (146)104
- Gamage, Lalith, MS, and Clarence de Silva, Ph.D., PE, C-Language Programming, Lesson 1 — Introduction to C Programming (149)85
- Gamage, Lalith, MS, and Clarence de Silva, Ph.D., PE, C-Language Programming, Lesson 2 — Data Types and Operators
- Gaskill, David M., Astro-Med, Inc., Recorder Resolution (147)100
- Gibson, Steve, Gibson Research Corp., Hard Disk Problems (148)106
- Harrie, Peter M., Schlumberger Transducer Div., Mass Flow and Density (146)109
- Henriksen, Truls, Pressure Systems Inc., Multichannel Pressure Control (148)78
- Holzschuher, Paul, Ohmart Corporation, Gamma Level Measurement (149)104
- Juds, Scott M., Opcon, Inc., Photoelectric Sensors — Tests and Specifications (148)88
- Juhasz, Arpad A., and Charles D. Bullock, US Army Ballistic Research Laboratory, Donald H. Newhall, Harwood Engineering Co., Inc., Calibration of Ballistic Pressure Transducers (146)123
- Kallman, Raymond, Pilgrim Electric, Grounding and ESD (149)106
- Kaufman, Edwin N., NDT of Composites (145)114
- Kicks, John C., PTC/Scaime USA, and Jean-Pierre Aumard, Scaime SA, Film-on-Quartz Strain Gages (147)106
- Kroemer, Kurt, Weidmuller, Terminal Blocks (147)93
- Leonard, Murray, and Steve Paul, Best Power Technology, UBS™ — Uninterruptible Battery System (148)100
- Lilla, Richard, Johnson Yokogawa, Ceramic-Liner Electromagnetic Flowmeters (146)102
- Machulda, Jim, MACH Systems, and Bill Wood, Pioneer Chlor Alkali, Environmental Monitor (149)119
- MacLennan, Doug, Gould, Inc., DSO — Digital Storage Oscilloscope (146)106
- Martin, Dave, Promac, Inc., CAC — Computer-Aided Calibration (148)74
- Mason, Terry, Avalon Electronics Ltd., Cassette-Based Data Recording (149)99
- Mundsinger, Ramon L., Energy Surge Control, and Howard C. Cooper, AMEMCO, Power Protection (145)96
- Newhall, Donald H., Harwood Engineering Co., Inc., Arpad A. Juhasz and Charles D. Bullock, US Army Ballistic Research Laboratory, Calibration of Ballistic Pressure Transducers (146)123
- Oehmke, Roger L.T., Georgia Institute of Technology, Flow Measurement Techniques (148)96
- Paul, Steve, and Murray Leonard, Best Power Technology, UBS™ — Uninterruptible Battery System (148)100
- Penz, David, Forth, Part 20 — Floating-Point Arithmetic (145)89
- Penz, David, Forth, Part 21 — The Quadratic (146)91
- Penz, David, Forth, Part 22 — Comparison of Forth with BASIC, FORTRAN, Pascal and COBOL (147)85
- Pinto, James J., Action Instruments, Inc., Industrial Applications of Personal Computers (147)112
- Poppe, Fred W., Allen-Bradley, Photoelectric Sensing — Part 1 (149)94
- Poppe, Fred W., Allen-Bradley, Photoelectric Sensing — Part 2 (150)61
- Prater, Bob, and John Purvis, St. Edward's University, Buses & LANs, Lesson 11 — LANs (146)85
- Prater, Bob, and John Purvis, St. Edward's University, Buses & LANs, Lesson 12 — MANs, WANs and PABXs (147)77
- Purvis, John, and Bob Prater, St. Edward's University, Buses & LANs, Lesson 11 — LANs (146)85
- Purvis, John, and Bob Prater, St. Edward's University, Buses & LANs, Lesson 12 — MANs, WANs and PABXs (147)77
- Rehrig, Rick, Micro-Specialty Systems, PC-Based Data Acquisition Systems (147)96
- Reuss, Erich H., and Peter Rummer, ITT Instruments, Intelligent Message Displays (150)74
- Rudback, Stephan, Matematica AB, Optimization of Orifice Plates, Venturis and Nozzles (147)116
- Rummer, Peter, and Erich H. Reuss, ITT Instruments, Intelligent Message Displays (150)74
- Schultz, Martin, Edward Dolejsi, and Clarence deSilva, Ph.D., Gear Transmission with Continuously-Variable Speed Ratio (150)83
- Selka, S.M., Reliance Gear Company, Linear Measurement with Rack/Pinion (145)120
- Sgrignoli, Jerry A., Phoenix Contact, Transient Absorption Technology (148)93
- Smith, Grant M., Western Graphtec, Data Management System (148)84
- Sostmann, Henry E., PE, SPRT Calibration (145)108
- Stoddard, Joan B., Stoddard Productivity Systems, Expert Systems, Lesson 12 — System Types (145)85
- Storer, Jim, Engineering Measurements Co., Vortex-Shedding Flowmeters (147)102
- Vasconcelos, Ved, Keithley-Metrabyte, PC-Based Instrumentation (146)116
- Veal, Barbara L., NCR Corporation, ARC-NET — A Solution for the Industrial LAN (145)104
- Wald, David, Delta-T Company, ASME/NIST Long-Radius Flow Nozzle (145)110
- Wilkinson, Vernon, Wilkinson Associates, Yardage Gaging (146)114
- Williamson, Joe, Carroll Touch, Touch-Screen Technology (149)109
- Wohlstein, Scott, SD Laboratories, Fiber Optics — Noncontact Technology (148)104
- Wohlstein, Scott, SD Laboratories, Laser Gaging (147)108
- Wohlstein, Scott, SD Laboratories, Near-Infrared Spectroscopy, Part 4 — Noncontact Technology (149)114
- Wood, Bill, Pioneer Chlor Alkali, and Jim Machulda, MACH Systems, Environmental Monitor (149)119

## OPINIONS

- Becker, Al, National Instruments, Modern PC-Based Data Acquisition Requires a New Approach to Signal Conditioning (150)136
- Buckon, Leo J., Meriam Instruments, The Future Looks Bright for the Bellows-Actuated Differential-Pressure Switch (147)157
- Dawson, Brian, Iasco, Selecting the Right Technology for Open Channel Flow Measurement (150)148
- Dellerson, Art, Sparling Instrument Co., Manufacturers: Stop, Look, Listen. The Market is Talking to You! (146)150
- Denton, Charles, Xycom, Trends in Industrial Computing (150)140
- Faust, Edward, Dresser Industries / Heise, Secondary Pressure Standards Are Approaching the Accuracy of Primary Standards (150)118
- Gotthardt, William, Endress + Hauser, Is it Real Vortex Flow or Not? (147)233
- Gray, Hollis, Edwards High Vacuum International, Capacitive Pressure Transducers Are Becoming Lower in Cost, Smaller in Size, and Yet with More Features and Power (147)146
- Herring, Jack, Endress + Hauser / Ondyne, Taming the Process Beastie (145)176
- House, Richard, National Instruments Corp., Will EISA Computers Replace PC/AT Compatible Computers? (145)152
- Kelley, Jack, Mettler Instrument Corp., Getting New Analytical Products to Market (149)136
- Latham, Jim, Meriam Instruments, Manometers, Still Widely Used in Industry (149)156
- Lecklider, Tom, Gould Electronics, The Case for Non-User Friendly Instruments (149)174
- Lynnworth, Larry, Panametrics, The Transit-Time Ultrasonic Flowmeter Has Come of Age (149)206
- Merchant, John, Mikron Instrument Co., The Dawn of a New Age of Infrared Thermometry (145)200
- Orellana, Paul, Contaq Technologies Corp., Intelligent Sensor Design for the Present and the Future (146)165
- Ostling, Hoag, Johnson Yokogawa Corp., Total Cost of Ownership is Often Overlooked in Field Instruments (146)153
- Ostling, Hoag, Johnson Yokogawa Corp., Vortex Flowmeters: An Attractive Alternative to Orifice Plates (147)235
- Seeley, Earle S., Walker Scientific, New Rare-Earth Magnet Materials Pose Special Magnetization Problems (147)176
- Smith, Grant M., Western Graphtec, Thermal-Array Recording with PC-Based Data Acquisition Provides a New State-of-the-Art (147)163
- Vom Berg, Haubold, JUMO Process Control, What is "Accuracy"? (146)212
- Webb, Frank, Brooks Instrument, Cost-Effective Selection of a Magmeter Requires Knowledge of the Many Models Available Today (146)151

## BUYERS GUIDE

- Accelerometers (150)91
- Analog Controllers, Meter Relays (145)124
- Analog Test Meters/Panel Meters (145)133
- Anemometers (147)132
- Annunciators (149)123
- Bimetallic Thermometers (149)127
- Bourdon Pressure Gauges (150)106
- Bridges/Potentiometers (147)139
- Capacitive Pressure Transducers (147)143
- Control Valves — Butterfly / Ball / Rotary Stem (150)111
- Control Valves — Globe/Plug/Pinch/Needle-Gate (145)140
- Control Valves — Regulator / Safety / Relief / Check (147)148
- Control Valves — Solenoid (148)111
- Counters (146)129
- Data Acquisition Systems (145)144
- Deadweight Testers / Pressure Calibrators (150)115
- Density / Specific Gravity (149)133
- Differential-Pressure Flowmeters (148)114
- Digital Pressure Transducers (148)124
- Distributed Controllers (146)140
- DPM, DVM, DMM (150)120
- Electromagnetic Flowmeters (146)146
- Encoders, Resolvers, Digitizers (148)127
- Filled-Systems Thermometers (148)138
- Filters (148)144
- Flow Switches (147)153
- Galvanometer Direct-Writing Recorders (146)155
- Gas Detectors & Analyzers (149)139
- IC Thermometers (145)164
- Industrial Computers & Software (150)132
- Level Measurement & Control (146)159
- Light-Beam Recorders (148)149
- Linear Array Recorders (147)160
- Lock-In Amplifiers (146)181
- LVDT — Linear Variable Differential Transformers (147)166
- Magnetic Measurements, Materials / Shielding (147)172
- Manometers (149)151
- Mass Flowmeters (148)151
- Mass/Force Measurement, Load Cells (149)158
- Moisture/Humidity Instruments (145)166
- Open-Channel Flowmeters (150)143
- Oscilloscopes (149)171
- Piezoelectric Pressure Transducers (149)176
- Positive Displacement Flowmeters (149)182
- Potentiometric Pressure Transducers (145)186

- Potentiometric (Servo) Recorders (150)151
- Power Measurement & Analysis (150)157
- Pressure Switches (148)161
- Programmable Controllers (148)168
- Proximity Sensors — Capacitive (145)188
- Proximity Sensors — Microwave (150)169
- Proximity Sensors — Optical / Photoelectric / Laser (149)186
- Proximity Sensors — Pneumatic (146)183
- Proximity Sensors — Ultrasonic (147)179
- Radiation Thermometers/Fyrometers (145)192
- Recorder Charts/Pens/Accessories (145)207
- Reluctive & LVDT Pressure Transducers (148)175
- Resistance Thermometers & Thermistors (146)185
- Rotameters — Variable-Area Flowmeters (148)179
- Rupture Discs (149)191
- Spectrum Analyzers (147)183
- Standards, Simulators, Calibrators (148)187
- Strain-Gage & Piezoresistive Pressure Transducers (146)199
- Tape Recorders (149)193
- Temperature Calibration Baths (148)196
- Temperature Sensitive Paints, Materials (150)170
- Terminal Blocks (147)188
- Thermocouples and Accessories (147)193
- Tilt Sensors (148)201
- Timing & Programming Equipment (148)204
- Torque Measurements (145)211
- Transient Protectors / Power Conditioners (150)174
- Transmitters (147)209
- Turbine Flowmeters (145)218
- Ultrasonic Flowmeters (149)200
- Vacuum (150)185
- Venturi Flowmeters & Valves (149)208
- Viscometers (147)226
- Vortex Flowmeters (147)231
- X-Y Recorders (149)210

## MISCELLANEOUS

- Book News (145)122, (147)130, (148)80, (149)91, (150)89
- Calendar of Events (145)122, (147)130, (148)80, (149)91, (150)89
- Industry News (145)103, (146)122, (147)129, (148)69, (149)98, (150)82
- Market Analysis (145)123, (146)128, (147)131, (148)110, (149)122, (150)90

